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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/619,231 | 07/14/2003 | Wilbur H. Crawley | 60,130-1786/03MRA0269 | 5823 |

26096 7590 02/17/2005

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EXAMINER

PHAM, MINH CHAU THI

| ART UNIT | PAPER NUMBER |
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1724

DATE MAILED: 02/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/619,231

Applicant(s)

CRAWLEY, WILBUR H.

Examiner

Minh-Chau T. Pham

Art Unit

1724

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 6-8, 11 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rosenberg (6,641,646 B2), in view of Kar et al (5,006,265).

Rosenberg discloses a method for cleaning a particulate filter (10) including the steps of flowing a fluid into an outlet (14) of a particulate filter (10), dislodging ash from the filter with fluid and carrying the ash in the fluid through an inlet (15) of the filter (see col. 3, lines 50-56). Claims 1, 6-8, 11 and 18-20 differ from the disclosure of Rosenberg in that the method of cleaning including liquid as a fluid. Kar et al disclose a method of cleaning a filter by backflushing which includes a fluid such as a liquid to remove solids that accumulate on flushable filters (see col. 1, lines 6-8 and lines 14-21). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to apply a fluid as liquid as taught by Kar et al to the filter outlet to back flush the filter of Rosenberg to provide a novel filter cleaning device which is capable to thoroughly and efficiently cleaning filters.

Claims 2-5, 9, 10 and 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rosenberg (6,641,646 B2), in view of Kar et al (5,006,265), and further in view of Davis et al (6,251,294 B1).

Claims 2-5, 9, 10 and 12-17 call for the step of sending acoustic waves such as ultrasonic waves through the fluid to assist in dislodging ash of the filter. Davis et al disclose a self generating filter unit wherein an ultrasonic transducer (36) periodically

energizable to dislodge caked solids from a filter element housing (see col. 3, line 58 through col. 4, line 7 and col. 5, lines 18-23). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide an acoustic waves such as ultrasonic waves as taught by Davis et al in the filter apparatus of Rosenberg and Kar et al since the ultrasonic vibration would ultrasonically vibrate or cavitate the liquid surrounding the filter element and thus dislodge solid caked on the outside of the filter and effectively clean the filter element.

Response to Arguments

Applicant's arguments filed on January 13, 2005 have been fully considered but they are not persuasive.

Applicant argues that the Rosenberg reference does not disclose "a fluid such as a liquid is flowed slowly and steadily through the filter, and while acoustic waves assist in dislodging the ash from the long passages and the thin walls, the fluid flowing through the filter carries the ash out of the filter". The Examiner respectfully disagrees. Claim 1 broadly calls for a method of cleaning a diesel particulate filter by flowing a fluid into the outlet of a filter, dislodging ash from the filter with the fluid, and carrying the ash in the fluid through an inlet of the filter. The word "fluid" is broadly claimed and is not limited to only water but also air. Therefore, Rosenberg's disclosure of air pulses for dislodging ash for a filter read on the language of the claims. In order to show that the fluid can be either air or liquid, the Examiner newly introduces Kar et al as the secondary reference in combination with the primary reference Rosenberg to show that this "backflushing is a common technique used to removes solids that accumulate on flushable filters wherein

in the backflushing step, a fluid, such as air, steam, or a liquid, either with or without surfactants, is passed through the filter media in the reverse direction to carry the solids away from the filter" (see col. 1, lines 15-21), as claimed.

Applicant's arguments with respect to claims 1-20 have been thoroughly considered but are moot in view of the new ground(s) of rejection as discussed above.

Due to this new ground of rejection, the finality is withdrawn and the prosecution is reopened for this instant patent application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh-Chau T. Pham whose telephone number is (571) 272-1163. The examiner can normally be reached on Mon/Tues/Thur/Fri 7:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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A handwritten signature in black ink, appearing to read 'Minh-Chau Pham', written in a cursive style.

Minh-Chau Pham

Patent Examiner

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February 10, 2005